

Trend Study 25A-16-99

Study site name: Tommy Hollow .

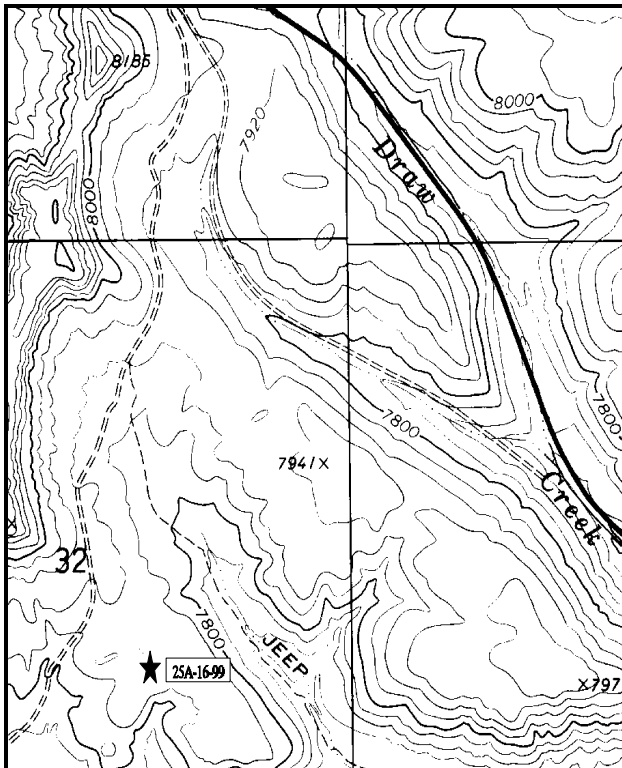
Range type: Big Sagebrush-Grass .

Compass bearing: frequency baseline 167°M.

Footmark (first frame at) 5 feet, footmarks (frequency belts) line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

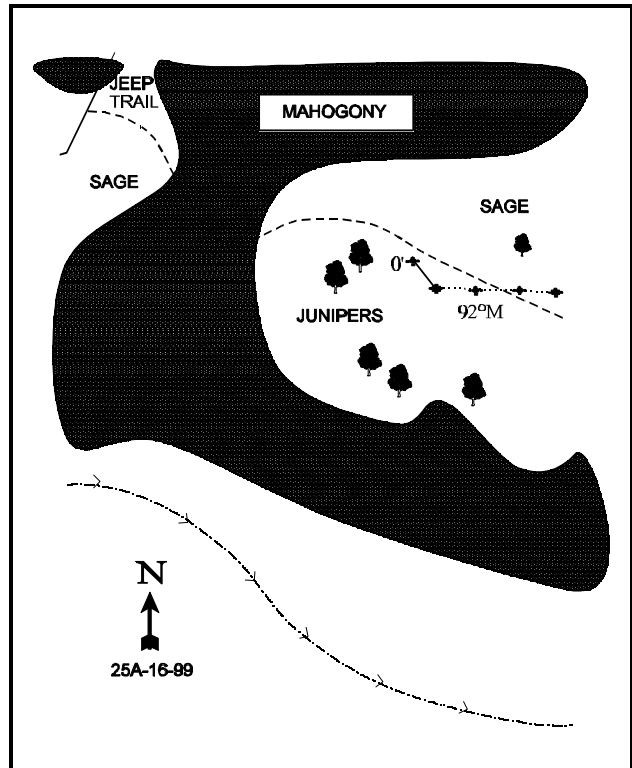
LOCATION DESCRIPTION

Take I-70 east for about 37.5 miles from Salina to a rest area exit. From the exit, turn right once, then right again to go west on the frontage road paralleling the freeway. Drive on the frontage road for 3.75 miles to a road (FS #013) turning left. Take this left turn and proceed 0.1 miles to a "T" in the road, turn left again and go south for 0.75 miles to the crest of the second hill. On the crest there is an old jeep trail turning left and going down the top of the hill. This road goes through a small clearing at the intersection, then through a thick patch of mahogany and junipers. The transect begins in the next sage clearing beyond the trees, about 50 feet past two pinyons standing beside each other near the edge of the clearing. The transect is marked with 2-1/2 foot tall rebar. The 0-foot baseline stake has a red browse tag #7193 attached.



Map Name: Old Woman Plateau, Utah

Township 23S , Range 4E , Section 32



Diagrammatic Sketch

UTM 4290474.897 N, 457845.521 E

## DISCUSSION

### Trend Study No. 25A-16 (45-2)

This study, Tommy Hollow, is on the low rolling mountains about one mile south of Emigrant Pass on I-70 at about 7,800 feet. It samples a flat that is dominated by sagebrush and grass and surrounded by curlleaf mountain mahogany and pinyon-juniper trees. According to the Forest Service, the Tommy Hollow area is a sheep allotment and grazed in early June and July, but cattle were seen on site in July of 1985. There were no recent signs of deer use, although older pellet groups were common. In 1985, there were also signs to indicate that elk also use the site in winter. Pellet group data in 1991 estimated 42 deer and 15 elk days use/acre (103 ddu/ha, 38 edu/ha). Pellet group data from 1999 estimate 96 deer, 93 elk and 9 cow days use/acre (237 ddu/ha, 229 edu/ha, 22 cdu/ha). Most of the deer and elk pellet groups were from winter use. Rabbit sign was also very common.

The soil is relatively deep with an effective rooting depth estimated at nearly 19 inches. It is a sandy clay loam with a slightly acid pH (6.5). Phosphorus is limiting at only 4.1 ppm. Values less than 10 ppm have been shown to limit normal plant growth and development. There is a hard clay layer in some areas at about 4 to 6 inches in depth. The soil penetrometer was able to penetrate the layer but it must be limiting to root development since black sagebrush is found in these areas. The soil surface has little rock or pavement cover and there is a high amount of bare soil exposed in the shrub interspaces. There is little erosion occurring however due to the lack of significant slope combined with fairly good vegetation and litter cover.

The key species in the flat are Wyoming big sagebrush and black sagebrush which currently ('99) provide 62% of the browse cover. Both have high population densities with good numbers of seedlings and young. Utilization was light to moderate in 1985 and 1999, but heavier in 1991. Percent decadence has been low except for 1991 when 55% of the black sagebrush and 51% of the Wyoming big sagebrush were classified as decadent. Currently, both populations of sagebrush are more healthy, show light to moderate use, low decadence, and contain low numbers of dead plants. Some of the change in density of sagebrush between 1991 and 1999 is due to the much larger sample used in 1999.

Several other desirable browse species available on or near the site include winterfat, bitterbrush, curlleaf mountain mahogany, and Utah serviceberry. Besides providing variety in forage, the nearby curlleaf mountain mahogany and pinyon-juniper stands provide good protective cover. Bitterbrush occur in low numbers but continue to receive moderate to heavy use. The entire population was classified as decadent in 1991, but currently only 33% of the stand is currently ('99) decadent. Stickyleaf low rabbitbrush and broom snakeweed are also abundant. There apparently was some confusion with identification of these two similar looking species in 1985 and 1991. Currently ('99) rabbitbrush numbers 12,580 plants/acre and broom snakeweed 5,780. They are small in stature, mostly unutilized and appear to have stable populations.

The understory vegetation is composed of a variety of grasses and forbs. The frequency of grasses is moderate. Common grasses include mutton bluegrass, bottlebrush squirreltail, blue grama, and western wheatgrass. Forbs are diverse but most species occur only occasionally. The most abundant forb is the low growing pussytoes which currently ('99) provides 60% of the forb cover.

### 1985 APPARENT TREND ASSESSMENT

Basically, the range trend appears stable to slightly down. There is a minimal amount of erosion which will not be a problem unless the ground is severely disturbed. Species diversity is high and the key species are vigorous and reproducing. Increaser species should be monitored closely as an indication of deteriorating range conditions.

## 1991 TREND ASSESSMENT

Soil trend would be considered improving since 1985 because there is less bare ground. However, it is still considered in poor condition because percent bare ground is still relatively high at 34%. Key browse species (Wyoming big sagebrush and black sagebrush) have shown some notable changes. The black sagebrush population has decreased by 12%, but it was already over 10,000 plants per acre. Percent decadency has gone from 7% to 55%. This would be expected with the prolonged drought. Wyoming big sagebrush has increased dramatically. Its population has more than doubled, but percent decadency has gone up from 6% to 51%. With increased moisture, this decadency rate would be expected to go downward. Broom snakeweed was picked up in 1991 with an estimated population of 133 plants per acre. Browse trend would be considered slightly down. The principal grass species have been stable since 1985, with the exception of western wheatgrass which has gone from an 8% to 33% quadrat frequency. The forbs are stable with some losses and some gains, depending on their tolerance to drought.

### TREND ASSESSMENT

soil - stable to slightly improving, but in poor condition

browse - slightly down

herbaceous understory - stable

## 1999 TREND ASSESSMENT

Trend for soil is stable to slightly improving, but still poor condition. Percent bare ground has increased but litter cover has also gone down. There is litter erosion occurring on the site due to the high vegetation cover combined with the gentle terrain. Trend for the key species, Wyoming big sagebrush and black sagebrush, is considered up slightly. The populations contain few dead plants indicating that the difference in densities between 1991 and 1999 is mainly due to the much larger sample now used which gives more accurate estimates for browse densities. Both populations show light to moderate use, improved vigor, and declining decadence. Both populations also show good young recruitment. Another positive aspect of the browse trend is the improvement in vigor for bitterbrush. During the 1991 reading, all of the bitterbrush were decadent and showed poor vigor. Now all show normal vigor and only 33% of the plants are considered decadent. Trend for the herbaceous understory is down slightly. Sum of nested frequency of grasses has declined slightly while nested frequency of perennial forbs has declined considerably. Nested frequency of Carex and bottlebrush squirreltail declined significantly while mutton bluegrass increased significantly. The forb composition is diverse but low growing species pussytoes, low fleabane, and desert phlox are the most abundant.

### TREND ASSESSMENT

soil - stable to slightly improving

browse - up slightly

herbaceous understory - down slightly

HERBACEOUS TRENDS --  
Herd unit 25A, Study no: 16

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover % '99
		'85	'91	'99	'85	'91	'99	
G	Agropyron smithii	a19	b84	b109	8	33	43	1.16
G	Bouteloua gracilis	116	117	91	47	48	34	1.48
G	Bromus tectorum (a)	-	-	2	-	-	1	.00
G	Carex spp.	b269	b264	a27	89	89	12	.69
G	Festuca ovina	b11	a-	c62	5	-	26	.84
G	Oryzopsis hymenoides	b72	a8	a4	33	4	2	.01
G	Poa fendleriana	a23	a30	b174	10	14	66	4.87
G	Poa secunda	b9	a-	a2	6	-	1	.00
G	Sitanion hystrix	ab142	b166	a110	58	70	40	2.10
G	Stipa comata	8	5	5	4	3	3	.07
G	Stipa lettermani	a8	a14	b52	3	5	20	1.18
Total for Annual Grasses		0	0	2	0	0	1	0.00
Total for Perennial Grasses		677	688	636	263	266	247	12.42
Total for Grasses		677	688	638	263	266	248	12.43
F	Agoseris glauca	-	5	-	-	2	-	-
F	Allium spp.	1	-	2	1	-	1	.03
F	Antennaria rosea	a14	b74	a27	6	36	9	2.40
F	Androsace septentrionalis (a)	-	-	28	-	-	15	.07
F	Arabis spp.	a-	c91	b13	-	46	6	.03
F	Arabis demissa	c47	b25	a-	25	12	-	-
F	Astragalus convallarius	-	-	1	-	-	1	.03
F	Astragalus spp.	1	1	9	1	1	5	.22
F	Castilleja chromosa	1	1	3	1	1	2	.01
F	Calochortus nuttallii	a23	b50	a5	10	24	2	.01
F	Crepis acuminata	-	2	-	-	1	-	-
F	Cymopterus spp.	-	3	-	-	2	-	-
F	Erigeron eatonii	ab6	a1	b13	3	1	6	.08
F	Erigeron pumilus	c110	b39	a14	49	21	7	.03
F	Eriogonum racemosum	a3	a-	b13	1	-	7	.13
F	Hymenoxys richardsonii	a-	a-	b13	-	-	6	.18
F	Ipomopsis aggregata	-	-	3	-	-	1	.03
F	Machaeranthera canescens	-	1	2	-	1	2	.01
F	Penstemon spp.	a-	a-	b8	-	-	4	.07
F	Penstemon pachyphyllus	3	2	2	1	1	2	.06
F	Phlox austromontana	a2	a-	b21	1	-	10	.22
F	Polygonum douglasii (a)	-	-	9	-	-	4	.02
F	Potentilla gracilis	-	-	3	-	-	1	.00
F	Sphaeralcea coccinea	b83	b60	a34	34	28	14	.34

T y p e	Species	Nested Frequency			Quadrat Frequency			Average Cover % 09
		'85	'91	'99	'85	'91	'99	
F	Taraxacum officinale	-	-	4	-	-	2	.01
F	Unknown forb-perennial	-	-	2	-	-	1	.00
Total for Annual Forbs		0	0	37	0	0	19	0.09
Total for Perennial Forbs		294	355	192	133	177	89	3.94
Total for Forbs		294	355	229	133	177	108	4.03

Values with different subscript letters are significantly different at  $\alpha = 0.10$  (annuals excluded)

#### BROWSE TRENDS --

Herd unit 25A, Study no: 16

T y p e	Species	Strip Frequency 09	Average Cover % 09
B	Amelanchier utahensis	4	.38
B	Artemisia nova	69	3.59
B	Artemisia tridentata tridentata	1	.15
B	Artemisia tridentata wyomingensis	85	13.40
B	Ceratoides lanata	5	.00
B	Cercocarpus ledifolius	0	.00
B	Chrysothamnus depressus	5	.03
B	Chrysothamnus viscidiflorus viscidiflorus	84	5.66
B	Echinocereus triglochidatus	-	.00
B	Gutierrezia sarothrae	53	.93
B	Opuntia spp.	15	.26
B	Pinus edulis	2	-
B	Purshia tridentata	8	2.97
B	Symphoricarpos oreophilus	4	.21
B	Tetradymia canescens	3	-
Total for Browse		338	27.61

BASIC COVER --

Herd unit 25A, Study no: 16

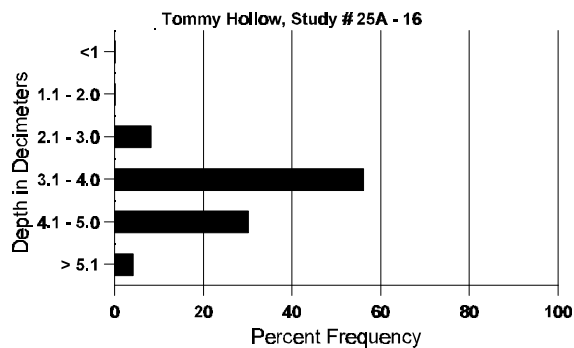
Cover Type	Nested Frequency 09	Average Cover %		
		'85	'91	'99
Vegetation	351	13.50	9.75	45.80
Rock	10	.25	0	.04
Pavement	127	1.50	1.75	.53
Litter	352	43.25	46.00	36.16
Cryptogams	172	0	8.50	6.69
Bare Ground	290	41.50	34.00	27.71

SOIL ANALYSIS DATA --

Herd Unit 25A, Study # 16, Study Name: Tommy Hollow

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
18.8	51.8 (18.1)	6.5	52.9	15.8	31.3	1.6	4.1	163.2	0.6

## Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 25A, Study no: 16

Type	Quadrat Frequency 09	Pellet Transect Days Use/Acre (ha) 09
Rabbit	67	n/a
Elk	32	93(230)
Deer	15	96(237)
Cattle	3	9(22)

## BROWSE CHARACTERISTICS --

Herd unit 25A, Study no: 16

Field Unit 25A, Study No. 10																		
A G R E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Amelanchier utahensis																		
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	91	-	1	-	-	-	-	-	-	-	-	1	-	-	66			1
	99	1	1	-	-	-	-	-	-	-	-	2	-	-	40			2
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	99	-	-	2	-	1	-	-	-	-	-	3	-	-	60	38	29	3
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	91	-	-	-	1	-	-	-	-	-	-	1	-	-	66			1
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		50%			00%			00%			-24%							
'99		40%			40%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	0%			
												'91	132		50%			
												'99	100		0%			
Artemisia nova																		
S	85	12	-	-	-	-	-	-	-	-	-	12	-	-	800			12
	91	8	-	-	1	-	-	-	-	-	-	9	-	-	600			9
	99	7	-	-	-	-	-	-	-	-	-	7	-	-	140			7
Y	85	73	1	-	-	-	-	-	-	-	-	74	-	-	4933			74
	91	19	9	7	1	-	-	-	-	-	-	34	2	-	2400			36
	99	84	10	-	-	-	-	-	-	-	-	94	-	-	1880			94
M	85	71	5	2	-	-	-	-	-	-	-	77	-	1	5200	8	11	78
	91	-	12	13	1	2	-	1	-	-	-	29	-	-	1933	7	10	29
	99	205	55	-	-	-	-	-	-	-	-	260	-	-	5200	9	16	260
D	85	8	1	2	-	-	-	-	-	-	-	11	-	-	733			11
	91	15	28	30	-	2	1	-	-	2	60	-	-	18	5200			78
	99	34	1	1	-	-	-	-	-	-	20	-	-	16	720			36
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	320			16
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		04%			02%			.61%			-12%							
'91		37%			37%			13%			-18%							
'99		17%			.25%			04%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	10866	Dec:	7%			
												'91	9533		55%			
												'99	7800		9%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata tridentata																		
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	1	-	-	-	-	-	-	-	-	1	-	-	66		1	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	1	-	-	-	-	-	-	-	1	-	-	66		1	
	99	-	-	-	-	-	-	-	-	1	-	1	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		50%			50%			00%			-85%							
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	0%			
												'91	132		50%			
												'99	20		100%			
Artemisia tridentata wyomingensis																		
S	85	37	-	-	-	-	-	-	-	-	37	-	-	-	2466		37	
	91	117	-	1	5	-	-	4	-	-	127	-	-	-	8466		127	
	99	13	-	-	-	-	-	-	-	-	13	-	-	-	260		13	
Y	85	57	-	-	-	-	-	-	-	-	55	2	-	-	3800		57	
	91	30	37	14	5	1	2	-	-	-	89	-	-	-	5933		89	
	99	86	13	-	-	-	-	-	-	-	99	-	-	-	1980		99	
M	85	42	9	1	-	-	-	-	-	-	50	1	1	-	3466	11 11	52	
	91	8	7	15	2	-	-	-	-	-	32	-	-	-	2133	11 18	32	
	99	111	63	-	-	-	-	-	-	-	174	-	-	-	3480	21 32	174	
D	85	3	3	1	-	-	-	-	-	-	6	1	-	-	466		7	
	91	31	45	47	-	-	4	-	-	-	83	-	-	44	8466		127	
	99	39	30	1	1	-	-	-	-	-	62	-	-	9	1420		71	
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	240		12	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		10%			02%			.86%			+53%							
'91		36%			33%			18%			-58%							
'99		31%			.29%			03%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	7732	Dec:	6%			
												'91	16532		51%			
												'99	6880		21%			

A G R E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Ceratoides lanata																		
S	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
Y	85	6	-	-	-	-	-	-	-	-	6	-	-	-	400		6	
	91	-	1	2	-	-	1	-	-	-	4	-	-	-	266		4	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	85	32	-	-	-	-	-	-	-	-	32	-	-	-	2133	4	3	
	91	-	-	41	-	-	1	2	-	-	44	-	-	-	2933	1	2	
	99	-	-	5	-	3	2	-	-	-	10	-	-	-	200	3	3	
D	85	3	-	-	-	-	-	-	-	-	3	-	-	-	200		3	
	91	-	-	2	-	-	-	-	-	-	1	-	-	1	133		2	
	99	-	-	-	-	-	1	-	-	-	1	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			+18%							
'91		02%			94%			02%			-93%							
'99		27%			73%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	2733	Dec:	7%			
												'91	3332		4%			
												'99	220		9%			
Cercocarpus ledifolius																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'99	0		-			
Chrysanthamnus depressus																		
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	1	-	-	-	-	-	-	-	1	-	-	-	66		1	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	91	-	1	5	-	-	4	-	-	-	10	-	-	-	666	2	2	
	99	-	3	2	3	-	1	-	-	-	9	-	-	-	180	3	5	
D	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	-	-	-	-	-	1	-	-	-	1	-	-	-	66		1	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			+92%							
'91		17%			83%			00%			-77%							
'99		33%			33%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	66	Dec:	100%			
												'91	798		8%			
												'99	180		0%			

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus viscidiflorus																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	91	8	-	-	-	-	-	-	-	-	8	-	-	-	533			8
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	91	65	13	14	7	1	1	-	-	-	100	1	-	-	6733			101
	99	19	-	-	1	-	-	-	-	-	20	-	-	-	400			20
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	91	67	94	61	20	13	2	3	-	-	259	1	-	-	17333	5	5	260
	99	597	2	-	-	-	-	-	-	-	599	-	-	-	11980	4	9	599
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	91	2	1	6	-	-	1	-	-	-	6	-	-	4	666			10
	99	10	-	-	-	-	-	-	-	-	10	-	-	-	200			10
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		33%			23%			01%			-49%							
'99		.31%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	0%			
												'91	24732		3%			
												'99	12580		2%			
Gutierrezia sarothrae																		
S	85	18	-	-	-	-	-	-	-	-	18	-	-	-	1200			18
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
Y	85	47	-	-	-	-	-	-	-	-	47	-	-	-	3133			47
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	41	-	-	-	-	-	-	-	-	41	-	-	-	820			41
M	85	222	-	-	-	-	-	-	-	-	222	-	-	-	14800	5	7	222
	91	2	-	-	-	-	-	-	-	-	2	-	-	-	133	4	5	2
	99	248	-	-	-	-	-	-	-	-	248	-	-	-	4960	6	7	248
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			-99%							
'91		00%			00%			00%			+98%							
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	17933	Dec:	-			
												'91	133		-			
												'99	5780		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Opuntia spp.																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	1	-	-	-	-	-	-	-	-	-	-	-	-	66		1	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	3	-	-	1	-	-	-	-	-	-	-	-	-	266		4	
	99	8	-	-	-	-	-	-	-	-	-	-	-	-	160		8	
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	91	-	-	-	-	-	-	2	-	-	-	-	-	-	133	2	2	
	99	19	-	-	-	-	-	-	-	-	-	-	-	-	380	3	19	
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	-	-	-	2	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%			+31%							
'99		00%			00%			07%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	0%			
												'91	399		0%			
												'99	580		7%			
Pinus edulis																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'99	40		-			

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Purshia tridentata																		
Y	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	2	-	-	-	-	-	2	-	-	-	40		2	
M	85	-	1	1	-	-	-	-	-	-	2	-	-	-	133	20	23	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	99	-	1	1	1	-	1	-	-	-	4	-	-	-	80	20	48	
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	1	-	3	-	-	-	4	266		4	
	99	-	2	1	-	-	-	-	-	-	3	-	-	-	60		3	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		33%			33%			00%			+25%							
'91		00%			75%			100%			-32%							
'99		33%			33%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	199	Dec:	0%			
												'91	266		100%			
												'99	180		33%			
Symphoricarpos oreophilus																		
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	99	4	-	-	-	-	-	-	-	-	4	-	-	-	80	14	27	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'99	120		-			
Tetradymia canescens																		
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	99	-	-	-	-	-	1	-	-	-	1	-	-	-	20	12	15	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		00%			33%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'99	60		-			